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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/849,977	05/20/2004	George F. Fanta	0180.02	8630

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USDA-ARS-OFFICE OF TECHNOLOGY TRANSFER  
NATIONAL CTR FOR AGRICULTURAL UTILIZATION RESEARCH  
1815 N. UNIVERSITY STREET  
PEORIA, IL 61604

EXAMINER

BISSETT, MELANIE D

ART UNIT PAPER NUMBER

1711

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/849,977

Applicant(s)

FANTA ET AL.

Examiner

Melanie D. Bissett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 18-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 9 and 12-17 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-17, drawn to an article, classified in class 428, subclass 532.
  - II. Claims 18-27, drawn to a method, classified in class 427, subclass 339.
2. The inventions are distinct, each from the other because of the following reasons:
3. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the article can be made by spreading a graft copolymer of solubilized starch onto the substrate.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Curtis Ribando on 4/8/05 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 5, 8-9, and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. in view of Skinner et al. Skinner et al. (US 4,156,664) can be found on the applicant's Form PTO-1449.

9. Weaver discloses starch-containing polymer compositions for absorbing water in diapers, surgical pads and sheets, and paper towels (abstract). Starch-polyacrylonitrile graft polymers are formed, where the starch used has been solubilized (col. 2 lines 44-49; col. 3 lines 43-51). Coatings of the copolymer may be applied to substrates including animal litter or bedding, cloth, and fiber (col. 7 lines 22-28). Starches include corn, waxy sorghum, wheat, and waxy corn starch (Table 1). However, the reference does not specify the application to hydrophobic polymeric substrates. Skinner teaches starch-hydrolyzed polyacrylonitrile graft copolymers for toweling, animal bedding and litter, diapers, bandages, surgical pads, and dental absorbents (abstract; col. 1 lines 49-55). The examples show application of the graft copolymers to PTFE cloths and sheets, indicating hydrophobic PTFE substrates as preferred substrates. Since cloths and

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sheets inherently possess a thickness, it is the examiner's position that the Skinner reference suggests the substrates as three-dimensional objects. Since the references are drawn to the same copolymers coated on substrates for the same applications, it is the examiner's position that it would have been prima facie obvious to apply the coatings of Weaver's invention onto PTFE substrates with the expectancy of forming suitable diapers, bandages, or surgical pads with improved water absorbency.

10. Regarding the coating weights of the copolymer on the substrate, Weaver discloses that amounts of 0.5-3% by weight based on the dry weight of the substrate should be used (col. 7 lines 22-29). However, the reference does not disclose specific coating weights in terms of mg starch/cm<sup>2</sup> of substrate. Since the amount of starch in the coating would affect the water absorbency of the coating, it is the examiner's position that it would have been prima facie obvious to use any coating weight needed to balance water absorbency and cost.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. in view of Skinner et al. as applied to claims 1-3, 5, 8, and 12-13 above, and further in view of Fanta et al.

12. The references apply as above, noting the solubilization of the starch but failing to mention the cooking method of the starch. Fanta teaches that steam jet-cooking serves to disrupt both the amylase and amylopectin components of the starch and thus dissolves the starch better than other conventional methods (col. 3 lines 45-57). Thus,

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it is the examiner's position that it would have been prima facie obvious to use a jet-cooked starch to form a totally soluble starch.

***Allowable Subject Matter***

13. Claims 6-7 and 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

15. The closest prior art, Weaver et al., discloses graft copolymers of solubilized starch as coatings on substrates. Skinner teaches that starch graft copolymers are applicable to hydrophobic substrates. However, the references do not teach coatings consisting of nodules, coatings of low thickness (Skinner suggests coating thicknesses of about 50  $\mu\text{m}$ ), or coatings applied to the claimed hydrophobic materials. It is the examiner's position that the articles having the noted limitations provide novel and unobvious steps over the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melanie D. Bissett  
Patent Examiner  
Art Unit 1711

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